What is claimed is:

1. A method of selectively disregarding co-channel signals in a communications network, the method comprising the steps of:

initiating a search sequence for a signal with a packet thereon;

receiving the signal;

processing the received signal;

detecting an in-band signal from the processed signal; and

activating a signal reception sequence for the detected in-band signal, the signal reception sequence including a selective abort sequence that depends upon the determination that the signal is co-channel interference.

2. The method according to claim 1, wherein processing the received signal includes:

determining a power level of the received signal; and

converting the received signal to a digital signal with a digital packet thereon.

3. The method according to claim 2, wherein processing the received signal further includes:

performing a quick-drop gain control procedure if the power level of the received signal is above a saturation limit; and

performing a coarse gain drop procedure if the power level of the received signal is within a defined range.

4. The method according to claim 2, wherein determining the power level includes determining an in-band power level.

5. The method according to claim 4, wherein determining the in-band power level includes determining a digital packet power of at least a portion of the digital packet.

6. The method according to claim 5, wherein measuring the digital packet power includes measuring a digital preamble power of at least a portion of a digital preamble of the digital packet.

7. The method according to claim 4, wherein processing the received signal further includes filtering the digital signal to provide a filtered digital signal with a filtered digital packet thereon.

8. The method according to claim 7, wherein determining the in-band power level includes determining a filtered digital signal power level of the filtered digital signal.

9. The method according to claim 8, wherein determining the filtered digital signal power level includes measuring a filtered digital packet power of at least a portion of the filtered digital packet.

10. The method according to claim 9, wherein measuring the filtered digital packet power includes measuring a filtered digital preamble power of at least a portion of a filtered digital preamble of the filtered digital packet.

11. The method according to claim 4, wherein detecting the in-band signal includes identifying a drop in receiver gain resulting from a strong in-band power level.

12. The method according to claim 11, wherein the drop in receiver gain is a quick-drop if the strong in-band power level exceeds a saturation limit.

13. The method according to claim 11, wherein the drop in receiver gain is a coarse gain drop if the strong in-band power is within a defined range.

14. The method according to claim 4, wherein detecting the in-band signal includes:
identifying an increase in the in-band power level that is proportional to an increase in the power level; and
recognizing a correlation exceeding correlation thresholds.

15. The method according to claim 14, wherein the correlation is cross-correlation.

16. The method according to claim 14, wherein the correlation is self-correlation.

17. The method according to claim 16, wherein detecting the in-band signal further includes, before the step of recognizing and after the step of identifying, filling an entire self-correlation

viewing window.

18. The method according to claim 1, wherein the selective abort sequence includes:
aborting the signal reception sequence if a new signal is detected, wherein the new signal is stronger than the detected in-band signal; and
returning to the step of receiving the signal for the new signal.

19. The method according to claim 1, wherein the selective abort sequence includes:
aborting the signal reception sequence if a new signal is detected, wherein the new signal is stronger than the detected in-band signal by at least a threshold amount; and
returning to the step of receiving the signal for the new signal.

20. The method according to claim 1, wherein the selective abort sequence includes:
aborting the signal reception sequence if a decrease in an in-band power measurement of the in-band signal exceeds a delta power decrease limit; and
returning to the step of initiating the search sequence.

21. The method according to claim 1, wherein the selective abort sequence includes:
aborting the signal reception sequence if the in-band signal is determined to at least one undesirable characteristic; and
returning to the step of initiating the search sequence.

22. The method according to claim 21, wherein the at least one undesirable characteristic includes one or more of an address and a BSSID.

23. The method according to claim 21, wherein the step of aborting is only applied to the in-band signal having packets of type data.

24. The method according to claim 22, wherein the step of aborting is only applied to the in-band signal having packets of type data.

25. A method of mitigating interference between desired signals and undesirable signals operating on the same channel, comprising:

determining one or more power profiles from the desired signals and the undesirable signals; and

establishing a receiver signal reception threshold based on the one or more power profiles.

26. The method according to claim 25, wherein determining the one or more power profile includes generating one or more signal strength histograms from the one or more power profiles.

27. The method according to claim 26, wherein at least one of the signal strength histograms represents desired signal strengths of at least a portion of a preamble of one or more of the desired signals.

28. The method according to claim 26, wherein at least one of the signal strength histograms represents undesirable signal strengths of at least a portion of a preamble of one or more of the undesirable signals.

29 The method according to claim 26, wherein:

one of the signal strength histograms represents desired signal strengths of at least a portion of a preamble of one or more of the desired signals; and

another of the signal strength histograms represents undesirable signal strengths of at least a portion of a preamble of one or more of the undesirable signals.

30. The method according to claim 25, wherein establishing the receiver signal reception threshold includes categorizing at least one of the power profiles from the desired signals as a desired power profile.

31. The method according to claim 25, wherein establishing the receiver signal reception threshold includes categorizing at least one of the power profiles of the undesirable signals as an undesirable power profile.

32. The method according to claim 25, wherein establishing the receiver signal reception threshold includes:

categorizing one of the power profiles from the desired signals as a desired power profile; and

categorizing another of the power profiles from the undesirable signals as an undesirable power profile.

33. The method according to claim 29, wherein establishing the receiver signal reception threshold includes:

categorizing one of the power profiles from the desired signals as a desired power profile; and

categorizing another of the power profiles from the undesirable signals as an undesirable power profile.

34. The method according to claim 25, wherein establishing the receiver signal reception threshold includes establishing a receiver detection threshold based on one or more of the power profiles.

35. The method according to claim 34, wherein the at least one of the power profiles is a signal strength histogram correlated to at least one of the desirable signals.

36. The method according to claim 35, wherein the receiver detection threshold is less than the signal strength histogram correlated to the at least one of the desired signals.

37. The method according to claim 34, wherein the at least one of the power profiles is a signal strength histogram correlated to at least one of the undesirable signals.

38. The method according to claim 37, wherein the receiver detection threshold is greater than the signal strength histogram correlated to the at least one of the undesirable signals.

39. The method according to claim 34, wherein:

one of the power profiles is a signal strength histogram correlated to at least one of the desirable signals; and

another of the power profiles is a signal strength histogram correlated to at least one of the undesirable signals.

40. The method according to claim 33, wherein establishing the receiver signal reception threshold includes establishing a receiver detection threshold based on one or more of the power profiles, wherein:

the desired power profile is the signal strength histogram representing desired signal strengths; and

the undesirable power profile is the signal strength histogram representing undesirable signal strengths.

41. The method according to claim 40, wherein:

the receiver detection threshold is less than the signal strength histogram representing desired signal strengths; and

the receiver detection threshold is greater than the signal strength histogram representing undesirable signal strengths.

42. A method of selectively disregarding co-channel signals in a communications network, the method comprising the steps of:

initiating a search sequence for a signal with a packet thereon;

receiving the signal;

processing the received signal, including determining a power level of the received signal;

detecting an in-band signal from the processed signal; and

activating a signal reception sequence for the detected in-band signal, the signal reception sequence including a stomping sequence that allows reception of a second in-band signal on top of the in-band signal.

43. The method according to claim 42, wherein the stomping sequence includes manipulating a Clear Channel Assessment signal to allow reception of the second in-band signal on top of the in-band signal.

44. The method according to claim 42, wherein processing the received signal includes determining a power level of the received signal.

45. The method according to claim 44, wherein the stomping sequence includes:

continuing the search sequence for the second signal with a second packet thereon;

receiving the second signal;

processing the received second signal, including determining a second power level of the received second signal;

detecting the second in-band signal from the processed second signal;

activating the signal reception sequence for the detected second in-band signal based on the second power level of the received second signal.

46. The method according to claim 45, wherein the signal reception sequence for the detected second in-band signal is activated if the second power lever of the received second signal is above a stomping threshold.

47. The method according to claim 46, wherein the stomping threshold is based a signal strength histogram.

48. The method according to claim 42, wherein the stomping sequence includes:

continuing the search sequence for the second signal with a second packet thereon;

receiving the second signal;

processing the received second signal, including decoding one or more characteristics of the received second signal;

detecting the second in-band signal from the processed second signal;

activating the signal reception sequence for the detected second in-band signal based on the decoded one or more characteristics of the received second signal.

49. The method according to claim 48, wherein the one or more characteristics of the received second signal include one or more of an address and a BSSID.

50. The method according to claim 49, wherein the stomping sequence is only applied to the second in-band signal having packets of type data.

51. A system for selectively disregarding signals operating on a common channel, comprising:

a circuit adapted to receive a signal with a packet thereon, and further adapted to convert the signal to a digital signal;

a filter section coupled to the circuit, that includes one or more filters that pass frequency components of the digital signal within a desired band of frequencies to obtain a filtered digital signal;

one or more power detectors coupled to the filter section, for measuring an in-band power of the digital signal and an in-band power of the filtered digital signal; and

control logic configured to execute a signal reception sequence if the in-band power levels of the digital signal and the filtered digital signal exceed one or more threshold values, the signal reception sequence including a selective abort sequence that depends upon the determination that the signal is co-channel interference.

52. The system of claim 51, wherein the one or more filters includes a finite impulse filter.

53. The system of claim 51, wherein the one or more filters includes a decimation filter.

54. The system of claim 51, wherein the one or more filters includes a low pass filter.

55. The system of claim 51, wherein the one or more power detectors include:
a first power detector for measuring the in-band power of the digital signal; and
a second power detector for measuring the in-band power of the filtered digital signal.

56. The system of claim 51, wherein the control logic includes a means for determining whether the one of more threshold values are exceeded.

57. The system of claim 56, wherein the means for determining comprises a restart circuit configured to detect an increase in the in-band powers of the digital signal and the filtered digital signal to the one or more threshold values.

58. The system of claim 51, wherein the control logic includes a means for signal detection that compares the in-band power of the digital signal to a digital signal power threshold value.

59. The system of claim 58, wherein the in-band power of the digital signal is a received

signal strength of at least a portion of a preamble of the packet of the digital signal.

60. The system of claim 51, wherein the control logic includes a means for filtered signal detection that compares the in-band power of the filtered digital signal to a filtered digital signal power threshold value.

61. The system of claim 60, wherein the in-band power of the filtered digital signal is a received signal strength of at least a portion of a preamble of the packet of the filtered digital signal.

62. The system of claim 51, further including a power storage means for storing the in-band power of the digital signal and the in-band power of the filtered digital signal.

63. The system of claim 62, wherein the power storage means is a register configured to store a power profile of at least a portion of a preamble of one or more of the digital signal and the filtered digital signal.

64. A system of selectively disregarding co-channel signals in a communications network, the system comprising:

means for receiving a signal with a packet thereon;

means for processing the received signal;

means for detecting an in-band signal from the processed signal; and

means for activating a signal reception sequence for the detected in-band signal, the signal reception sequence including a selective abort sequence that depends upon the determination that the signal is co-channel interference.

65. The system according to claim 64, wherein the means for processing the received signal includes:

means for determining a power level of the received signal; and

means for converting the received signal to a digital signal with a digital packet thereon.

66. The system according to claim 65, wherein the means for processing the received signal further includes:

means for performing a quick-drop gain control procedure if the power level of the received signal is above a saturation limit; and

means for performing a coarse gain drop procedure if the power level of the received signal is within a defined range.

67. The system according to claim 65, wherein the means for determining the power level includes a means for determining an in-band power level.

68. The system according to claim 67, wherein the means for processing the received signal further includes a means for filtering the digital signal to provide a filtered digital signal with a filtered digital packet thereon.

69. The system according to claim 67, wherein the means for detecting the in-band signal includes a means for identifying a drop in receiver gain resulting from a strong in-band power level.

70. The system according to claim 69, wherein the drop in receiver gain is a quick-drop if the strong in-band power level exceeds a saturation limit.

71. The system according to claim 69, wherein the drop in receiver gain is a coarse gain drop if the strong in-band power is within a defined range.

72. The system according to claim 67, wherein the means for detecting the in-band signal includes:

means for identifying an increase in the in-band power level that is proportional to an increase in the power level; and

means for recognizing a correlation exceeding correlation thresholds.

73. The system according to claim 64, wherein the selective abort sequence includes:

means for aborting the signal reception sequence if a new signal is detected, wherein the new signal is stronger than the detected in-band signal; and

means for returning to the step of receiving the signal for the new signal.

74. The system according to claim 64, wherein the selective abort sequence includes:

means for aborting the signal reception sequence if a new signal is detected, wherein the new signal is stronger than the detected in-band signal by at least a threshold amount; and

means for returning to the step of receiving the signal for the new signal.

75. The system according to claim 64, wherein the selective abort sequence includes:

means for aborting the signal reception sequence if a decrease in an in-band power measurement of the in-band signal exceeds a delta power decrease limit; and

means for returning to the step of initiating the search sequence.

76. The system according to claim 64, wherein the selective abort sequence includes:

means for aborting the signal reception sequence if the in-band signal is determined to at least one undesirable characteristic; and

means for returning to the step of initiating the search sequence.

77. The system according to claim 76, wherein the at least one undesirable characteristic includes one or more of an address and a BSSID.

78. The system according to claim 76, wherein the means for aborting is only applied to the in-band signal having packets of type data.

79. The system according to claim 77, wherein the means for aborting is only applied to the in-band signal having packets of type data.

80. A system of selectively disregarding co-channel signals in a communications network, the method comprising the steps of:

means for initiating a search sequence for a signal with a packet thereon;

means for receiving the signal;

means for processing the received signal, including determining a power level of the received signal;

means for detecting an in-band signal from the processed signal; and

means for activating a signal reception sequence for the detected in-band signal, the signal reception sequence including a stomping sequence that allows reception of a second in-band signal on top of the in-band signal.

81. The system according to claim 80, wherein the stomping sequence includes a means for manipulating a Clear Channel Assessment signal to allow reception of the second in-band signal on top of the in-band signal.

82. The system according to claim 80, wherein the means for processing the received signal includes a means for determining a power level of the received signal.

83. The system according to claim 82, wherein the stomping sequence includes:

means for continuing the search sequence for the second signal with a second packet thereon;

means for receiving the second signal;

means for processing the received second signal, including means for determining a second power level of the received second signal;

means for detecting the second in-band signal from the processed second signal;

means for activating the signal reception sequence for the detected second in-band signal based on the second power level of the received second signal.

84. The system according to claim 83, wherein the signal reception sequence for the detected second in-band signal is activated if the second power lever of the received second signal is above a stomping threshold.

85. The system according to claim 84, wherein the stomping threshold is based a signal strength histogram.

86. The system according to claim 80, wherein the stomping sequence includes:

continuing the search sequence for the second signal with a second packet thereon;

receiving the second signal;

processing the received second signal, including decoding one or more characteristics of the received second signal;

detecting the second in-band signal from the processed second signal;

activating the signal reception sequence for the detected second in-band signal based on the decoded one or more characteristics of the received second signal.

87. The system according to claim 86, wherein the one or more characteristics of the received second signal include one or more of an address and a BSSID.

88. The system according to claim 87, wherein the stomping sequence is only applied to the second in-band signal having packets of type data.